

**STUDIES ON NEOTROPICAL PHASMATODEA III: A NEW SPECIES OF
THE GENUS *ANISOMORPHA* GRAY, 1835 (PHASMATODEA:
PSEUDOPHASMATIDAE: PSEUDOPHASMATINAE) FROM HISPANIOLA**

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Abstract.—*Anisomorpha clara*, n. sp., from Hispaniola is described and illustrated from both sexes. It is the first record of true *Anisomorpha* Gray, 1835, in the Greater Antilles.

Key Words: stick insects, phasmids, Anisomorphini, taxonomy, Greater Antilles, Dominican Republic

A survey of the Hispaniolan orthopteroid insects was carried out from 2001 through 2004 comprising nine international expeditions and collections at 280 sites distributed throughout the geography of the Dominican Republic. Besides many interesting Orthoptera, large numbers of Phasmatodea were collected. In this first report on the stick insects, we describe a new species of the genus *Anisomorpha* Gray, 1835. Although the genus had been cited previously for the Antillean islands (e.g., Perez-Gelabert 2001), this is the first true *Anisomorpha* known from the area. All other species from Central or South America and the Caribbean attributed to *Anisomorpha* by various authors have proven to belong to other genera. All species described in *Anisomorpha* from the Greater Antilles are members of *Malacomorpha* Rehn, 1906 (Conle et al., in preparation). The new species is described and figured from both sexes, but the eggs remain unknown. Further studies dealing with

material collected in the Dominican Republic are in progress.

Abbreviations used are as follows: ANSP: Academy of Natural Sciences, Philadelphia, PA, USA; MHND: Museo Nacional de Historia Natural, Santo Domingo, Dominican Republic; USNM: National Museum of Natural History, Smithsonian Institution, Washington, DC, USA.

Anisomorpha Gray

Anisomorpha Gray 1835: 13. Type species: *Phasma buprestoides* Stoll 1813: 68, by subsequent designation of Kirby 1904: 401.

Anisomorpha was discussed and revised in detail by Conle and Hennemann (2002) and was believed to be extinct in the Caribbean. The three species then known are restricted to southeastern USA and the Yucatán Peninsula (Mexico and Belize).

Species Included and Distribution

1. *Anisomorpha buprestoides* (Stoll, 1813: 68) [*Phasma*].
= *Phasma vermicularis* Stoll, 1813: 68.
= *Spectrum bivittatum* Say, 1824: 38.
[Distribution: Southeastern USA (Georgia to Key West, Florida)]
2. *Anisomorpha clara*, n. sp.
[Distribution: Greater Antilles, Hispaniola (Dominican Republic)]
3. *Anisomorpha ferruginea* (Palisot de Beauvois, 1821: 167, pl. 14, figs. 6, 7) [*Phasma*].
[Distribution: Southeastern USA (except Florida)]
4. *Anisomorpha paromalus* Westwood, 1859: 17, pl. 3, figs. 5, 4: 1.
= *Anisomorpha monstrosa* Hebard, 1932: 42.
[Distribution: Mexico (Yucatán) and Belize]

***Anisomorpha clara* Conle, Hennemann, and Perez-Gelabert, new species**

(Figs. 1–6)

Holotype.—♂: Dominican Republic, RD-076, down from Cuevita, Valle Nuevo, La Vega Prov., 2,096 m, 18°46.326'N 70°40.438'W, 28.XI.2002, D. Perez, B. Hierro, R. Bastardo (night) (ANSP).

Paratypes.—(3 ♀, 39 nymphs): 2 ♀, 2 nymphs: Dominican Republic, RD-114, La Nevera, Valle Nuevo, La Vega Prov., 18°41.943'N 70°35.995'W, 1.IV.2003, D. Perez, R. Bastardo, B. Hierro (night) (ANSP, USNM, MHND); 1 ♀, 16 nymphs: same data as holotype (ANSP, USNM, MHND); 1 nymph: Dominican Republic, Nacimiento de Rio Yuna, Valle Nuevo, 18°49.750'N 70°38.057'W,

2,040 m, 27.X.2002, R. Bastardo, (USNM); 2 nymphs: Dominican Republic, RD-076, down from Cuevita, Valle Nuevo, La Vega Prov., 2,096 m, 18°46.326'N 70°40.438'W, 28.XI.2002, D. Perez, B. Hierro, R. Bastardo (night), in alcohol (USNM); 18 nymphs: Dominican Republic, RD-117, down from Cuevita, Valle Nuevo, La Vega Prov., 2,280 m, 18°46.258'N 70°40.564'W, 2.IV.2003, D. Perez, R. Bastardo, B. Hierro (night), in alcohol (ANSP, USNM).

Distribution.—Hispaniola: Dominican Republic, La Vega Province, Valle Nuevo.

Etymology.—The species epithet “*clara*” [*clarus* (Latin) = clear, pale, bright] refers to the remarkably pale and slightly translucent body and pale straw extremities.

Differentiation.—The new species is easily distinguished from all other species of *Anisomorpha* by its smaller size (at least in the female); very pale and slightly translucent straw coloration of the body; straw-colored legs and tarsi; lack of a dark longitudinal line along the lateral surfaces of the thorax and abdomen; lack of a posteromedian indentation of the anal segment of the male; and distinct geographical distribution, being the only representative of the genus known from the Greater Antilles.

Description.—Female (Figs. 3, 5): Typical for genus but small (body length 32.5–37.0 mm) and rather stout. Abdomen gently swollen medially. Legs long and slender, with indistinct carinae and entirely unarmed. Entire body surface smooth and shiny, sections of the thorax slightly translucent. General coloration of body, legs, tarsi, and antenna pale

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Figs. 1–5. *Anisomorpha clara*. 1, Male (holotype), terminal abdominal segments, lateral view. 2, Male (holotype), terminal abdominal segments, ventral view. 3, Female (paratype), terminal abdominal segments, lateral view. 4, Male (holotype), dorsal view. 5, Female (paratype), dorsal view. Figs. 1–3, ?scale = 1 mm; Figs. 5–6, scale = 10 mm.

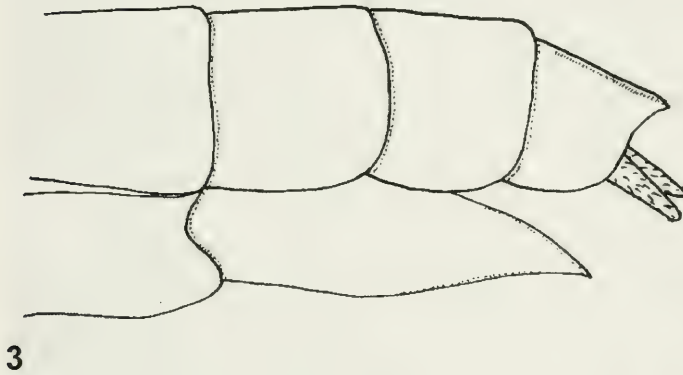
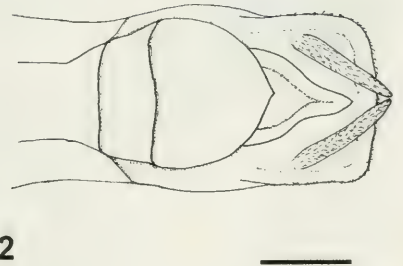
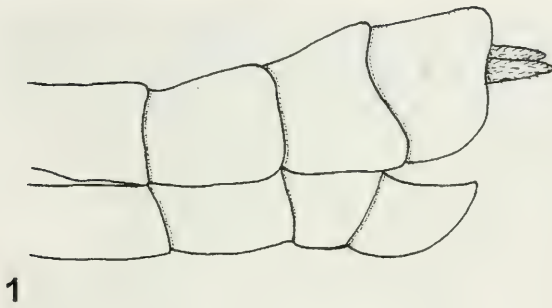




Fig. 6. Live *Anisomorpha clara* (male) on a leaf of its host plant *Garrya fadyenii*.

straw. Dorsal surface of head and entire body with a bold, black longitudinal median stripe and several indistinct minute brown lateral spots on abdominal tergites; sometimes brown lateral spots and markings present on thorax. Head with a fine, black postocular line. Meso- and metasterna occasionally with two broad, dark, parallel longitudinal median lines. Eye dark brown to black.

Head: Large, distinctly longer than wide, dorsally and laterally compressed, oval in cross-section. Section behind eyes considerably broadened. Eye small, oval and indistinctly convex. Antenna filiform, longer than head and entire thorax combined. Scape 1.5× longer than wide, rectangular, dorsoventrally compressed and distinctly carinated. Pedicel cylindrical, indistinctly longer than wide, 0.7×

the length of scape and distinctly narrower; wider than antennomeres. Third antennomere almost as long as scape and pedicel combined. Remaining antennomeres distinctly longer than wide, first increasing then decreasing in length towards apex of antenna; all cylindrical.

Thorax: Oval in cross-section. Pronotum as long as but slightly narrower than head, $1.3\times$ longer than wide; posterior margin broader than anterior margin. Anterior angles with a prominent gap for defensive glands. Transverse depression present placed in anterior third of segment and reaching lateral margins. Mesonotum broader and about $2\times$ longer than pronotum, $2\times$ longer than wide very slightly broadened towards posterior; $1.3\times$ longer than metanotum and median segment combined. Metanotum slightly narrower than mesonotum, $1.5\times$ longer than wide, rectangular and slightly longer than median segment. Transverse fissure between metanotum and median segment very faint. Rudiments of tegmina and alae absent. Pro-, meso- and metapleurae and sterna smooth and shiny.

Legs: Long and slender, indistinctly carinated, and entirely unarmed. Profemur about as long as mesothorax, hind leg projecting slightly over apex of abdomen. Profemur considerably compressed and curved basally; medioventral carina present and distinct. Basitarsi $1.5\times$ as long as second segment; metabasitarsi slightly longer. Tarsi finely bristled.

Abdomen: Including median segment about $1.2\times$ longer than head and entire thorax combined, subcylindrical, gently swollen medially and constricted towards tergite X. Median segment slightly shorter than metanotum, transverse and almost $2\times$ broader than long. Segments II–IV increasing, VI–VII decreasing in width, V broadest; VIII–X narrower than previous. Tergites II–VII transverse, II–V $2\times$, VI $1.5\times$, and VII

indistinctly wider than long; VIII–X about as wide as long. Tergite X with an indistinct longitudinal median carina, slightly narrower than IX, constricted posteriorly, and with a faint excavation of lateral margins near bases of cerci. All sterna smooth. Subgenital plate flat, spoonlike, smooth, rounded posteriorly, and at best reaching half way along anal segment. Cercus small, cylindrical, straight, slightly tapering to a pointed apex and broadened basally; minutely setose.

Male (Figs. 1, 2, 4, 6): Similar to female but smaller and much more slender (body length 30.0 mm) and rather stout for genus. Coloration as in female.

Head: As in female.

Thorax: Generally as in female, but mesonotum relatively longer and slightly more than $2\times$ longer than wide.

Legs: As in female. Profemur slightly longer than mesothorax, hind leg projecting considerably past apex of abdomen.

Abdomen: Abdomen not broadened. Including median segment about $1.2\times$ longer than head and complete thorax combined, subcylindrical. Median segment slightly shorter than metanotum, transverse, and almost $2\times$ broader than long. Segments II–VI narrowing, VII and VIII narrowest. Tergites II–VI transverse, II–V about $1.5\times$ and VI $1.2\times$ wider than long; VII almost quadrate; VIII and IX slightly widening towards posterior; IX broader than VIII. Posterior margin of anal segment rounded, without a medial indentation. Poculum small and flat, reaching about one-third way along tergite IX, posterior margin rounded and with a minute medial tip. Vomer longer than wide, triangular, apex tapered and distinctly pointed.

Comments.—*Anisomorpha clara* is the first record of *Anisomorpha* in the Greater Antilles. Most individuals were collected in close association with the

Table 1. Measurements (mm) of adult individuals of *Anisomorpha clara*.

	Holotype ♂	Paratypes, 3 ♀
Body	30.0	32.5–37.0
Pronotum	2.8	3.6–4.1
Mesonotum	6.3	7.0–8.6
Metanotum	2.7	3.0–3.5
Median segment	2.2	2.5–2.9
Profemur	6.9	7.7–8.2
Mesofemur	6.5	7.2–7.5
Metafemur	8.4	9.4–9.7
Protibia	7.1	7.9–8.2
Mesotibia	6.1	7.5–7.7
Metatibia	9.0	10.7–10.8
Antenna	25.0	28.0

plant *Garrya fadyenii* Hooker (Garryaceae), likely their main food plant in this montane habitat. Some were also found on *Rubus* (Rosaceae) leaves. The largest numbers of *A. clara* individuals were collected at night on the trail in the Cuevita area, which is located higher in the mountains that surround the valley. Nearly all individuals were found singly and no aggregations were encountered.

Valle Nuevo is an alpine mesa (around 2,200 m in elevation) in the Cordillera Central, the main mountain system on the island of Hispaniola. The area is characterized by a climate where annual rainfall averages 2,500 mm and temperatures can range from 17°C in the summer to -5°C in the winter. This humid montane landscape is dominated by pine (*Pinus occidentalis* Swartz) (Pinaceae) and other conifers like *Juniperus* Cupressaceae and *Podocarpus* Podocarpaceae, often mixed with many broadleaf trees and dense underbrush where epiphytes and mosses are also common. Most of the area is contained within the limits of the Juan B. Pérez Rancier National Park which occupies approximately 900 km².

An ectoparasite (Diptera: Ceratopogonidae) was found on one of the female paratypes. The eggs of *A. clara* are unknown.

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